

U. S. DEPARTMENT OF COMMERCE

DANIEL C. ROPER, Secretary

NATIONAL BUREAU OF STANDARDS

LYMAN J. BRIGGS, Director

WALNUT VENEERS

Bureau of Standards

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COMMERCIAL STANDARD CS64-37

Effective Date for New Production, December 15, 1937



A RECORDED STANDARD OF THE INDUSTRY

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PROMULGATION
of
COMMERCIAL STANDARD CS64-37
for
WALNUT VENEERS

On April 15, 1937, at the instance of the American Walnut Manufacturers Association, a general conference of representative producers and users of walnut veneers adopted a recommended commercial standard for this commodity. The industry has since accepted and approved for promulgation by the United States Department of Commerce, through the National Bureau of Standards, the standard as shown herein.

The standard became effective for new production on December 15, 1937.

Promulgation recommended.

I. J. Fairchild,
Chief, Division of Trade Standards.

Promulgated.

Lyman J. Briggs,
Director, National Bureau of Standards.

Promulgation approved.

Daniel C. Roper,
Secretary of Commerce.

WALNUT VENEERS

COMMERCIAL STANDARD CS64-37

PURPOSE

1. This standard provides definite minimum grade specifications for the production, distribution, and use of walnut veneers. It is designed to facilitate purchasing and contribute to higher standards of manufacture and greater uniformity of product and to provide a basis for grade certification similar to that followed in the grading of numerous species of lumber.

SCOPE

2. This standard covers minimum specifications for plain and semi-figured walnut veneers classified as sliced and half-round, rotary, and quarters, in thicknesses not greater than $\frac{1}{4}$ inch. It includes cutting yield and quality as governed by manufacturing and natural defects. Texture, figure, and grain character represent aesthetic values that will have to be determined largely between buyer and seller, as indicated by either full-length samples or swatches.

GENERAL REQUIREMENTS

3. *Workmanship*.—All walnut veneer sold as conforming to the commercial standard grades shall be smooth, firm-cut, uniform in thickness, and free from serious buckle and other defects, except as permitted in the specific rules for the several grades.

4. Width measurements shall be made at the middle point; on flitches of irregular taper the average width shall be taken as the point of measurement. The samples shall indicate the character of the entire flitch. The producer guarantees to the Veneer Inspection Service¹ and to the buyer that the samples truly and fairly represent the entire flitch. Frequent checks shall be made by the inspector to assure this.

5. *Heartwood requirement*.—The outside sheets of each flitch shall contain at least 65 percent heartwood, while the others may contain a minimum amount of sapwood sufficient to enable the straight trimming of the piece without sacrificing heartwood.

6. *Grade designations for plain and semifigured walnut*.—Commercial standard walnut veneer shall be graded from full samples, chiefly according to yield values, into 3 definite grades designated A, B, and

¹ The Veneer Inspection Service is operated under the direction of the American Walnut Manufacturers Association, 616 South Michigan Boulevard, Chicago, Ill., and its services are available to any producer of walnut veneers.

C, which are defined below; the plain wood grades to be subdivided into the following subgrades:

AA	BB	CC
A-Plus	B-Plus	
A	B	C

Plain or semifigured veneer not covered by these requirements will be marked "Unclassified," except:

Special grade.—A grade termed "Special" shall include flitches of good quality which, because of some peculiarity, cannot be placed in any of the regular grades, but should not be forced into the "Unclassified" grade. For example, freak flitches or butt-end flitches.

Figured walnut longwood.—Distinctly figured wood shall be certified as to measurement, thickness, proper sampling, and manufacture. It shall not be graded in accordance with requirements outlined herein but shall be described as figured wood and so stamped.

7. *Marking.*—All walnut veneer sold as conforming to the commercial standard shall be represented by samples secured in accordance with the standard method described. It shall be guaranteed by the manufacturer to meet all requirements of the commercial standard. Each flitch graded by the Veneer Inspection Service shall carry its "Certification" stamp and be grade-marked at the option of the producer.

8. *Packing.*—Veneers shall be securely packed in carefully designed crates or containers so as to prevent shifting of the pieces and the resultant splitting or breakage.

9. *Inspection.*—All walnut veneer guaranteed to conform to the commercial standard grading rules is sold subject to inspection as delivered, and complaints regarding the quality of any shipment shall be made within 30 days from receipt thereof, unless otherwise arranged between buyer and seller. Only flitches remaining intact may be submitted for reinspection.

10. Up to 5 percent of the footage of any shipment, when free of defects, may have a grading tolerance up to 2 feet less than the minimum specified lengths.

11. Because of the human element involved there may be honest differences of opinion in the inspection of walnut veneers that necessitate a general grading tolerance. If, upon reinspection, any shipment is below the standard to the extent of 4 percent or more of any one grade, the shipper shall make satisfactory adjustment.

DETAIL GRADE SPECIFICATIONS

SLICED AND HALF-ROUND ²

12. *Sampling.*—Samples shall be taken 40 full sheets from the top and bottom of flitch on flitches under 1,500 square feet; 3 samples to be taken only when necessary to illustrate definite changes in character, lengths, or defects. On flitches of 1,500 to 2,500 square feet content, a third or middle sample shall be taken. On larger flitches, 4 or 5 representative samples shall be taken, if necessary. In a flitch containing 30 sheets or more of quarters, a sample of the quarters shall be taken.

² See also table 1.

13. *Grade "A."*—Flitches in this grade shall contain 800 or more square feet of material.

14. The veneer at the fortieth full sheet from the outside of the log shall be 10 inches or more in width and 6 feet or more in length.

15. Eighty-five percent of the surface shall yield cuttings free of defects with 2 cuttings permitted on sheets of 6 to 11 square feet or 3 cuttings on sheets over 12 square feet.

16. These cuttings, except for quarters, shall be not less than 5 inches wide and contain not less than 2 square feet. Quarters shall yield cuttings free of defects with a minimum size of 5 by 36 inches or 4 by 48 inches. The above cuttings shall be free of serious discoloration, worm holes, splits, or other unusable defects.

17. The "AA" subgrade shall contain no buckle and no stained ends.

18. Pin knots, cat-eyes, or bars at the rate of one for each square foot of the sheet shall be allowed in the lowest end of this grade (A), as determined by the average of the samples. (Large burl or bar-type pin knots allowed at the rate of one-half for each square foot.) Although generally usable these defects are permitted in but limited numbers in this grade and a flitch is never lowered more than one grade because of their presence.

19. *Grade "B."*—Flitches in this grade shall contain 500 or more square feet of material.

20. The veneer at the fortieth full sheet from the outside of the log shall be 8 inches or more in width and 5 feet or more in length.

21. Seventy-five percent of the surface shall yield cuttings free of defects with 3 cuttings which, except for quarters, shall be not less than 4 inches wide and contain not less than $1\frac{1}{2}$ square feet. Quarters shall yield cuttings free of defects with a minimum size of $4\frac{1}{2}$ by 30 inches, or 4 by 48 inches. The above cuttings shall be free of serious discoloration, worm holes, splits, or other unusable defects.

22. Pin knots, cat-eyes, or bars at the rate of three for each square foot shall be allowed. In the subgrade "B" 3 such bars of any type are allowable, whereas in "BB" and "B-plus" grades large burl or bar-type pin knots are permitted not in excess of one and one-half for each square foot. All such pin knots shall be determined by the average of the samples.

23. *Grade "C."*—Flitches in this grade have no minimum footage requirements.

24. The veneer at the fortieth full sheet from the outside of the log shall be 6 inches or more in width and of any length.

25. Sixty percent of the surface shall yield cuttings free of defects with any number of cuttings, which, except for quarters, shall be not less than 4 inches wide and contain not less than 1 square foot. Quarters shall yield cuttings free of defects with a minimum size of 4 by 30 inches.

26. The above cuttings shall be free of serious discoloration, worm holes, splits, and other unusable defects excepting that pin knots, cat-eyes, or bars, regardless of number, shall be permitted in the low end, and 3 per surface foot in "CC" subgrade.

27. *Grade "U."*—All flitches that do not meet the specifications of the regular grades, such as excessive sap (except in the case of highly figured wood), worm holes, bad discoloration, bad buckle, or poor cutting, shall be "U" grade or unclassified.

ROTARY³

28. *Sampling.*—Samples shall be taken 25 to 30 sheets from top and bottom of flitch. Two samples shall be taken on all flitches under 1,200 feet, unless a third sample is necessary on account of too much variation in width or character. On flitches over 1,200 feet, 3 or more samples shall be taken, to fairly represent the stock.

29. *Black wood required.*—The outside sheets of each flitch are to contain a minimum of at least 65 percent of black wood.

30. *End checks.*—End checks up to 3 inches in length are not considered as defects in the grading of rotary.

31. *Grades.*—All rotary veneers shall be graded into 3 definite grades, e. g., *A*, *B*, and *C*. Such rotary as does not meet any of the grade specifications shall be marked "*U*" or unclassified.

32. *Grade "A."*—Flitches in this grade shall contain 800 or more square feet of veneer. The narrowest stock permissible is to be not less than 12 inches in width and 5 feet in length. Ninety-five percent in the "*AA*" subgrade and 90 percent in "*A-Plus*" and "*A*" of the surface shall yield cuttings free of defects, 2 cuttings permitted on sheets of 12 square feet and under or 3 cuttings on sheets of over 12 square feet. Cuttings shall be not less than 6 inches wide and shall contain not less than 2½ square feet.

33. *Grade "B."*—Flitches in this grade shall contain 500 or more square feet of veneer, with minimum width of 10 inches and minimum length of 4 feet 6 inches. Each sheet of "*B-plus*" shall yield 85 percent, and of "*B*" 80 percent of cuttings free of defects. Cuttings shall be not less than 5 inches in width and shall contain not less than 2 square feet. No more than 3 cuttings can be used to obtain required yield (or 4 on sheets 12 square feet and over).

34. *Grade "C."*—Flitches in this grade have no minimum footage requirement and no limitation on length, but the veneers shall be not less than 6 inches in width. Each sheet shall yield at least 60 percent of cuttings free of defects. No limit to number of cuttings, but no cutting is to be narrower than 4 inches and to contain no less than 1½ square feet.

35. *Grade "U."*—All flitches that do not meet the specifications of the regular grades, such as excessive sap (except in the case of highly figured wood), worms, bad discoloration, bad buckle, or poor cutting, shall be "*U*" grade or unclassified.

³ See also table 2.

QUARTERS ⁴

36. *Sampling*.—Samples are to be taken to show fairly the quality of the flitch. On quarters with only a small variation in width only one sample is necessary unless there is considerable variation in character or part of the flitch shows a defect. On all stocks containing 300 or more square feet 2 samples must be shown.

37. *Grades*.—All quarters are to be graded into 3 grades, *A*, *B*, and *C*; any quarters that do not meet the grade specification shall be unclassified. The footage of the flitch is not to be considered a factor in determining the grade. The average of all samples (except for yield) shall be considered in grading.

38. *Grade "A."*—Flitches in this grade shall consist of veneer 6 inches or more in width and 5 feet or more in length. Each sheet shall yield 85 percent cuttings free from defects with not more than two cuttings allowed on any one sheet. Minimum width of cuttings shall be 5 inches, and no cutting shall contain less than 180 square inches.

39. In quarters, pin knots, and cat-eyes alike are to be seriously considered, with an allowance of not more than one per surface foot. In grade *A*, the stripe caused by quartering shall be reasonably straight; the sapwood or the flat grained heartwood or a combination of both shall not exceed an average of 25 percent of the sheet.

40. *Grade "B."*—Flitches in this grade shall consist of veneer 5 inches or more in width and 4½ feet or more in length. Each sheet shall yield 75 percent of cuttings free of defects. Minimum width of each cutting shall be 4 inches, and no cutting shall contain less than 144 square inches. Not more than 3 cuttings are permissible on any one sheet and not more than 2 pin knots or cat-eyes are permissible per surface foot. All "*B*" grade is to be of reasonable stripe, not necessarily all straight, but the sapwood or the flat grained heartwood or a combination of both shall not exceed an average of 35 percent of the sheet.

41. *Grade "C."*—Flitches in this grade shall consist of veneer 4 inches or more in width and 4 feet or more in length. Each sheet shall yield 60 percent of cuttings free of defects. Any number of cuttings is allowed, but no cutting is to be less than 4 inches in width or to contain less than 120 square inches. The flat grained heartwood shall not exceed an average of 50 percent of the sheet. Pin knots shall not be considered as defects.

42. *Grade "U."*—All quarters that do not meet the above specifications shall be "*U*" grade or unclassified, such as flitches with excessive sap or heartwood, or those badly buckled, discolored, or wormy.

⁴ See also table 3.

TABLE 1.—*Sliced and half-round—Walnut-veneer grading rules*

Grade	Minimum size of flitch			Guaranteed yield, each sheet must produce	Cuttings allowed to determine guaranteed yield			Quarters, allowed size—width and length in inches	Pin knots, cat-eyes, swirls, and bars—maximum number allowed, as shown by average of samples
	Footage in surface feet	Width in inches, 40 full-length sheets from top	Length in feet		Number	Size			
						Width in inches	Square feet, except quarters		
"AA"-----	800	10	6	85	2 on 6 to 11 sq ft; 3 on sheets 12sq ft and up.	5	2	$\left\{ \begin{array}{l} 5 \times 36 \\ 4 \times 48 \\ 5 \times 36 \\ 4 \times 48 \\ 5 \times 36 \\ 4 \times 48 \end{array} \right\}$	One per surface foot, except large burl or bar type $\frac{1}{2}$ per surface foot.
"A Plus"-----	800	10	6	85		5	2		
"A"-----	800	10	6	85		5	2		
"BB"-----	500	8	5	75	3 on 3 to 10 sq ft; 4 on sheets 12 sq ft and up.	4	1 $\frac{1}{2}$	4 $\frac{1}{2}$ x 30 4 x 48	$\left\{ \begin{array}{l} \text{Three per surface foot} \\ \text{(large burl or bar "pin knots" 1}\frac{1}{2} \text{ per surface foot).} \end{array} \right\}$
"B Plus"-----	500	8	5	75		4	1 $\frac{1}{2}$		
"B"-----	500	8	5	75		4	1 $\frac{1}{2}$		
"CC"-----	0	6	No limit	60	No limit-----	4	1	4 x 30	Three per surface foot
"C"-----	0	6	No limit	60	-----do-----	4	1	4 x 30	Same as "B". Not a defect.

NOTES

Unclassified: Any unfigured veneer not covered by the above specifications.

Special grade: Includes flitches of good quality which, because of some peculiarity, cannot be placed in any of the regular grades, but should not be forced into the "Unclassified" grade. For example, freak flitches or butt-end flitches.

Figured: Distinctly figured wood.

In addition, the inspectors shall be guided by an approved set of graded samples that shall serve as a "measuring stick." The inspectors shall be permitted to use their own judgment in making the subgrades, which work is done after the samples have been graded into one of the three main grades. A short-length "A" grade stock, where minimum width is 10 inches, is required to be absolutely "Prime", otherwise it is degraded one grade.

NOTE.—Basic yields of 85, 75, and 60 percent apply in all grades. Stocks are then placed in subgrades being judged for texture, character, and general appearance.

TABLE 2.—*Rotary—Walnut-veneer grading rules*

Minimum size of flitch				Yield each sheet must produce	Cuttings allowed		
Grade ¹	Footage in surface feet	Width in inches 25 to 30 sheets from top	Length		Number	Minimum width in inches	Minimum square feet
"AA"-----	800	12	ft. in.	%	2 on sheets 12 sq ft or less; 3 on sheets over 12 sq feet.	{	
"A Plus"-----	800	12	5 5	95 and up----			
"A"-----	800	12	5 5	90-----			
"B Plus"-----	500	10	4 6	85 and up----	3 to 12; 4, 12, and up-----	{	
"B"-----	500	10	4 6	80-----			
"C"-----		6	No limit	60-----			
					No limit-----	4	1½

NOTES

"U": Unclassified: All stocks that will not make the above grades. Excessive sap, except in figured wood. Worms, badly buckled, badly discolored, and poor cutting.

Special grade: Includes flitches of good quality which, because of some peculiarity, cannot be placed in any of the regular grades, but should not be forced into the "Unclassified" grade. For example, freak flitches or butt-end flitches.

Figured: Distinctly figured wood

¹ End checks in any grade, up to 3 inches in length, are not considered

TABLE 3.—*Quarters—Walnut-veneer grading rules*

Grade	Minimum size		Yield each sheet must produce	Cuttings allowed				Remarks	
	Width in inches	Length in feet		Number	Minimum width in inches	Minimum square inches	Pin knots or cat-eyes		Heart-wood and sapwood
"AA"-----	6	5	% 85	2	5	180	1 per surface foot; all bar type pin knots count as 2.	{ Maximum 25 % average.	{ Stripe to be considered reasonably straight.
"A Plus"-----	6	5	% 85	2	5	180			
"A"-----	6	5	% 85	2	5	180			
"B Plus"-----	5	4½	75	3	4	144	2 per surface foot-----	{ Maximum 35 % average.	{ Stripe to be considered not all straight.
"B"-----	5	4½	75	3	4	144			
"C"-----	4	4	60	Any number	4	120	Any number-----	Maximum 50 % any sheet.	

NOTES

"U": All quarters that do not make the above grades. Excessive sap or heartwood, baldy buckled, discolored, or wormy.

Special grade: Includes flitches of good quality which because of some peculiarity cannot be placed in any of the regular grades, but should not be forced into the "Unclassified" grade. For example, freak flitches or butt-end flitches.

Figured: Distinctly figured wood.

GLOSSARY OF TERMS USED IN WALNUT VENEER INDUSTRY

Bark pockets.—Comparatively small areas of bark around which normal wood has grown. Usually these are the result of a local injury.

Bars.—A type of figure, or irregularity of grain resembling a dip in the grain, running at right angles, or nearly so, to the length of the veneer. Bars occur generally on quartered surfaces, and result from cutting longitudinally through a small pin knot or the adjacent swirl figure surrounding it.

Bird pecks.—Small spots of irregular grain or very small bark pockets supposedly resulting from damage to the tree by birds.

Burl.—A type of figure produced by cutting through burls, which are wartlike protuberances on trees. They contain the dark pith centers of a large number of undeveloped buds. (See *Stumpwood* for contrast.)

Cat-eyes.—See *Knot, pin*.—The term *Cat-eye* generally refers to a pin knot less conspicuous than one-fourth of an inch in diameter.

Chain figure.—See *Figure*.

Checks.—Small splits running parallel to the grain of the wood, caused chiefly by strains produced in seasoning.

Crotchwood.—Highly figured veneer produced from that portion of a tree where two limbs unite.

Cutting.—The word *Cutting* as used in these rules means a portion of a sheet of veneer cut to dimension width and length, free from standard defects, obtained by crosscutting or ripping, or both.

Defects, open.—Checks, splits, cracks, loose knots, worm holes, shakes, or other defects are areas interrupting the smooth continuity of the surface.

Defects.—Include all defects enumerated as open defects, and, in addition, bark pockets, serious buckle, and serious stain or discoloration.

Dote.—Synonym, *Doze*. An incipient form of decay characterized by a dull and lifeless appearance of the wood, accompanied by a lack of strength and a softening of wood substance.

Figure.—Figure is the pattern formed by peculiar or abnormal arrangement of the elements within the tree; by reflected light caused by that peculiar arrangement of the wood fibers; and by the exposure of the medullary rays. The various kinds of figure are known by many different terms, such as:

Chain figure.—A succession of short cross markings of uniform character, remotely suggesting cross links of a chain.

Cross figure.—Known also as cross-fire, fiddle-back, etc., is a reasonably distinct marking, a dip or roll of the grain at approximately right angles to the length of the tree.

Mottle figure.—Mottle figure is caused by variation and derangement of the fibers which produce a mottled appearance in the wood.

Rope figure.—A succession of short cross figures, remotely suggesting the twist of a rope.

Grain character.—Synonyms, *Heart character*, *Flat grain*, *Leaf character*; antonyms, quartered or vertical grain stock.

The pattern produced by cutting through growth rings, and exposing the layers of prominent vessels, and springwood and summerwood, thus producing a varying pattern.

Quartered grain.—Synonyms, *Edge grain*, *Vertical grain*, *Comb grain*, *Rift grain*, and *Stripe grain*. These terms are used where the veneer is sliced or sawn with the cutting edge parallel to the radii of the log. Thus the surface of the resulting piece is approximately at right angles to the growth rings. The veneers thus produced are called *Quartered*, *Pencil stripe*, *Medium stripe*, etc.; antonyms, flat grain, plain-sawn, or plain sliced.

[NOTE: In the standard grading rules for walnut veneer *Figured* applies only to cross figure, rope figure, and the like, and not to grain character which, for the purpose of the rules, is considered plain wood.]

Flat grain.—Refers to the grain produced in approximately tangential or plain cut veneers.

Flitch.—(a) A hewn or sawed log or a section of a log made ready for cutting into veneers by shaping up the edges, etc.; (b) the above after cutting (complete bundle of thin sheets laid together in sequence as they were sliced or sawn).

Grain.—A rather loose term applied to the alignment and arrangement of cells and other elements of wood as it occurs in the living tree. Grain is perhaps most easily delineated in certain woods by the presence of annual layers of more densely aggregated cells or by groups of prominent vessels which form the well-known growth rings. When these are severed they become quite pronounced, and the effect produced is referred to as "grain." Grain is influenced by three factors: (1) Character of the annual ring; (2) natural direction of the wood fibers, pores, etc., in relation to the axis of the tree; and (3) mechanical variation in manufacture. Grain is spoken of as either fine grain or coarse grain. See *Figure—Grain character*.

Grain character.—The pattern produced by cutting through growth rings and exposing the layers of springwood (porous) and summerwood (dense) and of prominent vessels, thus producing a varying pattern. This pattern is most pronounced in lumber or veneer cut tangentially (flat sawn) or in rotary-cut veneers.

Grain, ruptured.—A condition of slight breaks in the veneer caused by irregular grain or improper cutting.

Half-round.—A method of cutting veneer to bring out certain grain character, accomplished in a manner similar to rotary cutting, except that the piece being cut is mounted, off center, on a "stay log," a device that permits the cutting of the log on a wider sweep than when mounted with its center secured in the lathe.

Hardwoods.—General term used to designate the lumber produced from broad-leaved or deciduous trees in opposition to the so-called softwoods, those produced by evergreen or coniferous trees.

Heartwood.—Synonym, *Blackwood*; antonyms, sap, sapwood, or whitewood. The inner matured portion of the tree, darker in color.

Knots.—Cross section of a branch or limb whose grain usually runs at right angles to that of the piece in which it occurs.

Knots, open.—Where a portion of the wood substance of the knot has dropped out or where cross checks have occurred to present an opening.

Knots, pin.—A knot less than one-fourth inch in diameter which obviously shows a distinct central portion, as distinguished from swirls. Other terms applied to pin knots are cat-eyes, bars, etc.

Line.—The total of widths of the sheets.

Loose side.—See definition under *Tight side*.

Luster.—Luster refers to the gloss of the wood and is the result of the reflection of light by the cell walls.

Mottle.—See *Figure*.

Quarters.—Quartered or striped wood are sheets where quartered grain predominates with little or no heart grain. Quarters are produced by removing the center (or heart grain) from the sheets, or by cutting quartered flitches.

Ring, annual.—Synonym, *Growth ring*. Each layer of wood made up of springwood and summerwood added during the year's growth to the outer portion of the tree just under the bark.

Rope figure.—See *Figure*.

Rotary cut.—A manner of cutting veneer by which the entire log is mounted centrally in a lathe and turned against a broad cutting knife which is set into the log at a slight angle.

Rough cut.—Synonym, *Loose cut*. Terms applied to veneers, the surface of which has knife marks and other broken grain as a result of poor cutting.

Rubber.—Usually a streak across the face of a sheet of veneer, caused by broken or distorted fibers resulting from material falling between the pressure bar and the surface of the flitch.

Sap (an abbreviated term for *Sapwood*).—The lighter-colored wood substance occurring in the outer portion of the tree.

Sapwood.—Synonyms, *Sap*, *Whitewood*; antonyms, heartwood, heart, blackwood. The outer living portion of the wood in a tree; in walnut veneer, the lighter-colored portion which develops generally along the edges of the sheets.

Sliced.—A manner of cutting veneer by which logs or sawn flitches are held securely in a slicing machine and passed across a large knife which shears off the veneer in sheets.

Splits.—Separations of wood fiber running parallel with the grain.

Shake.—Synonym, *Ringheart*. Separations of the annual rings—usually between 1 year's growth and the adjacent.

Streaks, mineral.—Natural discolorations of the wood substance; that is, grown into the wood.

Stumpwood.—Synonym, *Butt walnut*. Obtained from the butt or stump of a walnut tree. Figured stumpwood occurs where the wood fiber is crinkled into wavy ripple marks during the process of growth.

A common misnomer occurs in describing stumpwood or butt walnut as "burl walnut." Burl walnut is produced only by cutting up one of the huge burls or wartlike bumps that appear on a walnut tree. The twisted, thickened wood fiber of the burl gives a very beautiful bird's-eye or peacock-tail pattern, entirely different from stumpwood.

Swirls.—(a) The small spots developed by irregular grain adjacent to a pin knot, usually where the black center of the pin knot itself does not show, is also described as a swirl or cat-eye. These usually

are but a fraction of an inch in diameter. (As used in the rules even this more strict interpretation applies); (b) irregular grain, usually surrounding knots or crotches. Small sheets several inches in size with swirl figure are produced for overlays and small matched panels.

Swatch.—The term swatch applies to one sheet of veneer, 3 feet long and the full width of the flitch, taken usually near the center, and in such a way as to truly represent the color, texture, and other aesthetic characteristics of the flitch.

Texture.—A term often used interchangeably with grain. It has to do with the size and distribution of the pores or cells. Texture is often spoken of as "hard texture" and "soft texture." In a sense the term "soft texture" applies more specifically to the working qualities of the wood.

Tight side.—This term and its opposite, *Loose side*, are used to refer to veneer cut with a knife. The product as it is cut by the wedge-shaped or beveled knife may be distorted, thus producing small ruptures on the convex side known as the *Loose side*. The opposite surface, strained slightly in compression, but free from any ruptures, is known as the *Tight side*.

The distinction between *Loose side* and *Tight side* is less in the case of sliced-wood than in rotary.

Unclassified.—Flitches that are eliminated by the grade requirements from grades *A*, *B*, and *C*, are marked "Unclassified." This occurs very infrequently and results from such things as serious buckle, serious discoloration, poor manufacture, very small size flitches, and the like.

Worms.—Worm holes resulting from an infestation of worms. Spot-worm holes usually are surrounded by discoloration and occur before the veneer is cut, whereas pin worm holes are smaller and occur generally after the veneer is produced.

EFFECTIVE DATE

The standard became effective for new production on December 15, 1937.

STANDING COMMITTEE

The following comprises the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comment concerning the standard and suggestions for revision, may be addressed to any member of the committee or to the Division of Trade Standards, National Bureau of Standards:

- L. H. BAYENS (chairman), Wood-Mosaic Co., Inc., Louisville, Ky.
- A. A. HAMMES, Penrod, Jurden & Clark Co., Sheffield Station, Kansas City, Mo.
- S. M. NICKEY, Jr., Nickey Bros., Memphis, Tenn.
- A. O. BINFORD, The Hoosier Panel Co., New Albany, Ind.
- A. N. CARSTENS, Algoma Plywood & Veneer Co., 1234 N. Halsted St., Chicago, Ill.
- COURTNEY MCINTYRE, Landstrom Furniture Co., Rockford, Ill.
- HOWARD KAY, Youngsville Forest Manufacturing Co., Youngsville, Pa.
- HARRY H. STEIDLE (secretary), Division of Trade Standards, National Bureau of Standards, Washington, D. C.

HISTORY OF PROJECT

On September 22, 1932, at the request of the American Walnut Manufacturers Association, a preliminary conference was held in Chicago looking toward the establishment of grading rules for walnut veneers similar in effect to the rules employed in the grading of lumber.

A public conference on this matter was held in Louisville, Ky., on October 20, 1932, at which time commercial standard grading rules were recommended for the general acceptance of the industry.

Because the use of grading rules represented quite a wide departure from the usual methods of selling walnut veneer, the system was not immediately accepted. However, under the guidance of the American Walnut Manufacturers Association the grading rules were revised and improved, and the inspection service was perfected.

On April 15, the revised grading specifications were again presented for general discussion at a public hearing and approved for circulation to the industry for acceptance. Written endorsement of the industry's grading standards was received from a satisfactory majority of walnut veneer producers and consumers. Therefore, on November 15, 1937, the National Bureau of Standards announced that the standard would become effective December 15, 1937.

ACCEPTANCE OF COMMERCIAL STANDARD

This sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date_____

Division of Trade Standards,
National Bureau of Standards,
Washington, D. C.

Gentlemen:

Having considered the statements on the reverse side of this sheet, we accept the Commercial Standard CS64-37 as our standard of practice in the

Production ¹

Distribution ¹

Use ¹

of walnut veneers.

We will assist in securing its general recognition and use, and will cooperate with the standing committee to effect revisions of the standard when necessary.

Signature_____

(Kindly typewrite or print the following lines)

Name and title_____

Company_____

(Fill in exactly as it should be listed in pamphlet)

Street address_____

City and State_____

¹ Please designate which group you represent by drawing lines through the other two. Please file separate acceptances for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade papers, colleges, etc., desiring to record their general approval, the words "in principle" should be added after the signature.

TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial standards are commodity specifications voluntarily established by mutual consent of the industry. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the industry as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. *The acceptor's responsibility.*—The purpose of commercial standards is to establish for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all branches of the industry together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by companies representing a satisfactory majority of production, the success of the project is announced. If, however, in the opinion of the standing committee of the industry or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

ACCEPTORS

The organizations and individuals listed below have accepted these grading rules as their standard of practice in the production, distribution, and use of walnut veneers. Such endorsement does not signify that they may not find it necessary to deviate from the standard, nor that producers so listed guarantee all of their products to conform with the requirements of this standard. Therefore specific evidence of quality certification should be obtained where required.

ASSOCIATIONS

American Institute of Architects, The, Structural Service Department, Washington, D. C. (In principle.)
 American Walnut Manufacturers Association, Service of the, Chicago, Ill. (In principle.)
 Central Committee on Lumber Standards, Washington, D. C. (In principle.)
 National Association of Furniture Manufacturers, Inc., Chicago, Ill.
 National Hardwood Lumber Association, Chicago, Ill. (In principle.)
 National Lumber Exporters Association, Memphis, Tenn. (In principle.)
 National Lumber Manufacturers Association, Washington, D. C.

FIRMS

Algoma Plywood and Veneer Co., Algoma, Wis.
 American Plywood Corporation, New London, Wis.
 Anchor Furniture Co., Inc., Jamestown, N. Y.
 Amos-Thompson Corporation, Edinburg, Ind.
 Behrend, Max & Edward, T/S Jacob Behrend, Philadelphia, Pa. (In principle.)
 Bissell Carpet Sweeper Co., Grand Rapids, Mich.
 Blumer Cabinet Co., St. Louis, Mo.
 Bonneau Co., J. J., Long Island City, N. Y.
 Company of Master Craftsmen, Inc., Flushing, Long Island, N. Y.
 Crane & MacMahon, Inc., St. Marys, Ohio.
 Crompton & Knowles Loom Works, Worcester, Mass. (In principle.)
 Davis-Birely Table Co., Shelbyville, Ind.
 Evansville Veneer and Lumber Co., Evansville, Ind.

Farley & Loetscher Manufacturing Co.; Dubuque, Iowa.
 Gloucester Furniture Corporation, West Point, Va.
 Haberer Furniture Co., J. E., Lowville, N. Y.
 Harbor Plywood Corporation, Chicago, Ill.
 Hartzell Industries, Inc., Piqua, Ohio.
 Haskelite Manufacturing Corporation, Chicago, Ill.
 Huntingburg Furniture Co., Huntingburg, Ind. (In principle.)
 Ikend Veneers, W. C., Indianapolis, Ind.
 Irving & Casson—A. H. Davenport Co., Boston, Mass.
 Jasper Wood Products Co., Jasper, Ind.
 Kentucky Veneer Works, Inc., Louisville, Ky.
 Lassahn Furniture Co., Chicago, Ill.
 Maley & Wertz Lumber Co., Evansville, Ind.
 Manchester Furniture Co., The, Manchester, Ohio.
 Mathushek Piano Manufacturing Co., New York, N. Y.
 McDowell Furniture Co., Inc., Marion, N. C.
 Michelsen Furniture Co., George J., Rochester, N. Y.
 Minneapolis Desk Manufacturing Co., Minneapolis, Minn.
 Mueller Furniture Co., Grand Rapids, Mich.
 Mutschler Bros. Co., Nappanee, Ind.
 New York Wood Working Corporation, New York, N. Y.
 Nickey Bros., Inc., Memphis, Tenn.
 Norwood-White Co., Inc., Hyde Park, Mass.
 Orleans Plywood Co., Orleans, Vt.
 Paine Furniture Co., Boston, Mass.
 Palmer & Embury Manufacturing Co., New York, N. Y.
 Peerless Furniture Co., Shippensburg, Pa.

- Pennsylvania Lumberman, Scranton, Pa. (In principle.)
- Pennsylvania State College, The, Department of Forestry, State College, Pa. (In principle.)
- Penrod, Jurden & Clark Co., Kansas City, Mo.
- Pickrel Walnut Co., New Albany, Ind., and St. Louis, Mo.
- Pierson-Hollowell Co., Inc., Indianapolis, Ind.
- Poinsett Lumber and Manufacturing Co., Trumann, Ark.
- Red Lion Furniture Co., Red Lion, Pa.
- Rohmann Sons & Co., C. F., Brooklyn, N. Y.
- Schwamb Co., The Theodore, Arlington, Mass.
- Seaburg Manufacturing Co., Jamestown, N. Y.
- Sears, Roebuck & Co., Chicago, Ill.
- Shelbyville Desk Co., Shelbyville, Ind.
- Showers Bros. Co., Bloomington, Ind.
- Southern Box and Lumber Co., Wilmington, N. C.
- Standard Screen Co., Chicago, Ill.
- Stem, Inc., Chester B., New Albany, Ind.
- Steul & Sons, Inc., Henry C., Buffalo, N. Y.
- Stoneman Co., The, Chicago, Ill.
- Sweat-Comings Co., The, Richford, Vt.
- Taber Lumber Co., Keokuk, Iowa.
- Tennessee Furniture Corporation, Chattanooga, Tenn.
- Underwood Veneer Co., Wausau, Wis.
- Union Furniture Co., Batesville, Ind.
- United Furniture Manufacturers, Wilkes-Barre, Pa.
- Van Seiver Co., J. B., Camden, N. J.
- W. I. B. Co., Chicago, Ill. (In principle.)
- Wood Mosaic Co., Louisville, Ky.

U. S. GOVERNMENT

Treasury Department, U. S., Washington, D. C.

COMMERCIAL STANDARDS

CS No.	Item	CS No.	Item
0-36.	The commercial standards service and its value to business.	36-33.	Fourdrinier wire cloth (second edition).
1-32.	Clinical thermometers (second edition).	37-31.	Steel bone plates and screws.
2-30.	Mopsticks.	38-32.	Hospital rubber sheeting.
3-38.	Stoddard solvent (second edition).	39-37.	Wool and part wool blankets (second edition).
4-29.	Staple porcelain (all-clay) plumbing fixtures.	40-32.	Surgeons' rubber gloves.
5-29.	Steel pipe nipples.	41-32.	Surgeons' latex gloves.
6-31.	Wrought-iron pipe nipples (second edition).	42-35.	Fiber insulating board (second edition).
7-29.	Standard weight malleable iron or steel screwed unions.	43-32.	Grading of sulphonated oils.
8-33.	Gage blanks (second edition).	44-32.	Apple wraps.
9-33.	Builders' template hardware (second edition).	45-36.	Douglas fir plywood (domestic grades) (second edition).
10-29.	Brass pipe nipples.	46-36.	Hosiery lengths and sizes (second edition).
11-29.	Regain of mercerized cotton yarns.	47-34.	Marking of gold-filled and rolled-gold-plate articles other than watch cases.
12-35.	Fuel oils (third edition).	48-34.	Domestic burners for Pennsylvania anthracite (underfeed type).
13-30.	Dress patterns.	49-34.	Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.
14-31.	Boys' blouses, button-on waists, shirts, and junior shirts.	50-34.	Binders board for bookbinding and other purposes.
15-29.	Men's pajamas.	51-35.	Marking articles made of silver in combination with gold.
16-29.	Wall paper.	52-35.	Mohair pile fabrics (100-percent mohair plain velvet, 100-percent mohair plain frieze, and 50-percent mohair plain frieze).
17-32.	Diamond core drill fittings (second edition).	53-35.	Colors and finishes for cast stone.
18-29.	Hickory golf shafts.	54-35.	Mattresses for hospitals.
19-32.	Foundry patterns of wood (second edition).	55-35.	Mattresses for institutions.
20-36.	Staple vitreous china plumbing fixtures (second edition).	56-36.	Oak flooring.
21-36.	Interchangeable ground-glass joints, stopcocks, and stoppers (third edition).	57-36.	Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings.
22-30.	Builders' hardware (nontemplate).	58-36.	Woven elastic fabrics for use in overalls (overall elastic webbing).
23-30.	Feldspar.	59-36.	Woven dress fabrics—testing and reporting.
24-30.	Standard screw threads.	60-36.	Hardwood dimension lumber.
25-36.	Special screw threads.	61-37.	Wood-slat venetian blinds.
26-30.	Aromatic red cedar closet lining.	62-38.	Colors for kitchen accessories.
27-36.	Mirrors (second edition).	63-38.	Colors for bathroom accessories.
28-32.	Cotton fabric tents, tarpaulins, and covers.	64-37.	Walnut veneers.
29-31.	Staple seats for water-closet bowls.		
30-31.	Colors for sanitary ware.		
31-35.	Wood shingles (third edition).		
32-31.	Cotton cloth for rubber and pyroxylin coating.		
33-32.	Knit underwear (exclusive of rayon).		
34-31.	Bag, case, and strap leather.		
35-31.	Plywood (hardwood and eastern red cedar).		

NOTICE.—Those interested in commercial standards with a view toward accepting them as a basis of every day practice in their industry, may secure copies of the above standards, while the supply lasts, by addressing the Division of Trade Standards, National Bureau of Standards, Washington, D. C.

